DYNAMIC EDUCATIONAL COLLABORATION BETWEEN UNIVERSITY AND HIGH SCHOOL FACULTY PROMOTING PARTNERSHIP IN TEACHING AND LEARNING IN THE 21ST CENTURY

By

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ABSTRACT

A dynamic partnership has been developed and cultivated between the North Carolina Central University (NCCU) and Durham Public Schools (DPS) called "The Learning Laboratory Initiative Partnership". The faculties involved in the partnership are from North Carolina Central University and Durham Public Schools Hillside New Tech High School. The overall purpose of the collaborative partnership between NCCU and Hillside New Tech High is to have a positive impact on 9–12 students' performance in science, mathematics, engineering, and technology (the STEM areas) by using current and emerging technologies, Instructional Design, the TPACK integration model, and a content faculty mentoring system. The partnership focuses on an intensive program of professional development and content mentoring of 9–12 teachers at Hillside New Tech. This project is divided into two phases based on the fiscal calendar. This research paper provides an overview of the project as a best practice model of technology integration and university–school partnership. It discusses the components of the project and provides a demonstration of professional development activities and teacher products as a result of the training provided by NCCU faculty for Hillside NT teachers.

Keywords: Emerging Technologies, Instructional Design, TPACK.

INTRODUCTION

The ever changing face of technology in education, the steep learning curves of some technologies, the complexities of teaching with technology, engaging students in the learning process, and technology standards require that teacher education programs and educational systems prepare teachers to understand the relationship between technology knowledge (TK), content knowledge (CK), and pedagogical knowledge (PK) in the technological pedagogical content knowledge (TPACK) model (Hofer & Harris, 2010; Mishra, Koehler & Henriksen, 2011). Studies show that teacher education programs do not adequately prepare preservice teachers with the knowledge and experiences needed to effectively integrate technology in their classrooms (Bull, 2009; Milken Exchange on Education Technology, 1998). The need for instructional technology courses is important in preparing pre–service and in–service teachers from diverse cultural settings to understand, plan for, and integrate technology in their teaching (Figg & Jaipal, 2009; Koehler & Mishra, 2005). However, teaching technology knowledge, content knowledge and pedagogical knowledge as separate entities do not guarantee adequate preparation of teachers to develop rich and in–depth experiences that would enrich their knowledge of integrating technology in their teaching.

The Basic Linear Model of Instructional Design also called the "ADDIE Model"

Instructional Design (also called Instructional Systems Design [ISD]) according to the ID2 Research Group is "the practice of creating instructional experiences which make the acquisition of knowledge and skill more efficient, effective, and appealing" (Merrill, M. D., Drake, L., Lacy, M. J., Pratt, J., & ID2 Research Group, 1996). The ADDIE model is a systematic instructional design model consisting of five phases: (i) Analysis, (i) Design, (iii) Development, (iv) Implementation, and (v) Evaluation. Various flavors and versions of the ADDIE model exist (Learning Theories Knowledgebase, 2012). The acronym "ADDIE" is a generic

term for the five-phase instructional design model consisting of the systemic use Analysis, Design, Development, Implementation, and Evaluation (which is comprised of Formative and Summative Evaluation) (Osler, 2010). Each step has an outcome that feeds into the next step in the sequence. There are probably over 100+ different variations of the generic ADDIE model (Learning Theories Knowledgebase, 2012). The originator of this particular ID model is unknown it has been refined by educational researchers and Instructional Designers Walter Dick and Lou Carey (1996) and other models of Instructional Design have developed their foundations in and from it [Figure 1]. Displays an illustration of the Basic Linear Model Instructional Design from the book "Visualus Visioneering Volumetrically: The Mathematics of the Innovative Problem-Solving Model of Inventive Instructional Design" (Osler, 2010).

A Description of the Five Phases of the Basic Linear Model of Instructional Design

Analysis Phase: During analysis, the designer identifies the learning problem, the goals and objectives, the audience's needs, existing knowledge, and any other relevant characteristics. Analysis also considers the learning environment, any constraints, the delivery options, and the timeline for the project.

Design Phase: A systematic process of specifying learning objectives. Detailed storyboards and prototypes are often made, and the look and feel, graphic design, user-interface and content is determined here.

Development Phase: The actual creation (production) of the content and learning materials based on the Design phase.

Implementation Phase: During implementation, the plan is put into action and a procedure for training the learner and teacher is developed. Materials are delivered or distributed to the student group. After delivery, the effectiveness of the training materials is evaluated.

Figure 1. The Basic Linear Model of Instructional Design (The ADDIE Model)

Evaluation Phase (Two Types Formative and Summative): This phase consists of (i) Formative and (ii) Summative Evaluation. Formative Evaluation is present in each stage of the ADDIE process. Summative evaluation consists of tests designed for criterion-related referenced items and providing opportunities for feedback from the users. Revisions are made as necessary. Rapid prototyping (continual feedback) has sometimes been cited as a way to improve the generic ADDIE model (Learning Theories Knowledge base, 2012).

Technological Pedagogical Content Knowledge (TPACK)

The interplay of content knowledge, pedagogical knowledge, and technology knowledge in a technology or methods course or staff development training minimizes the struggles of in-service teachers (Hechter and Phyfe, 2010). According to Hechter and Phyfe (2010), it is important for teachers to understand and be aware of the TPACK model for effective technology integration in their classrooms. Hofer and Harris (2010) state that when "content-keyed learning activities paired with suggested technological tools and resources, the approach attempts scaffold the process in ways that will help teachers became more discerning about and confident with their technologically integrated planning."(p. 301). Technological Pedagogical Content Knowledge (TPACK) as a model has focused on helping teachers define technology integration model aligned with content learning activities, (Hofer and Harris, 2010; Albion, Jamison-Proctor, Finger, 2010; Ho and Albion, 2010.) Figure 1) Technological Pedagogical Content Knowledge

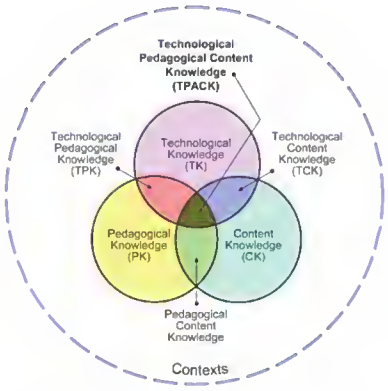

Figure 2. The Technological Pedagogical Content Knowledge (TPACK) Model

(TPACK). For effective integration, the TPACK model should be aligned with the International Society for Technology in Education National Educational Technology Standards for teachers, (ISTE: NETS–T, 2008).

As we prepare teochers to understand how to integrote twenty–first century technologies in their classrooms, technology should not be taught in isolation, but be aligned with content and pedagogical knowledge. Teacher educotion programs have the onus to ensure that TPACK integration takes place in a method's course or in technology–based courses. The TPACK model is supported by several theories. Two main theories aligned with TPACK in this partnership ore the multiple intelligences theory as espoused by Gardner (1983) and the constructivist teaching approoch. The triodic interplay of multiple intelligences, constructivist teaching and TPACK in this partnership will scaffold on the leorning and teaching process, address different learning styles of students, utilize prior experiences of teachers and students, and foster higher level thinking skills of participants to create rich technology–based activities. (Figure 2) is an illustration of the Technological Pedagogical Content Knowledge (TPACK) Model.

TPACK Use in National Organizations

At national, state and local levels, standards for pedagogical, technology and content knowledge are now commonploce, especially for content oreos, grode levels, and for initial and renewal licensure of teachers. North Carolino, like most states in the union and professional organizations such as ISTE (2008), NCATE (2000), the National Science Teacher Association (NSTA, 2012) (NSTA, 2003), the National Council for Social Studies Teachers (2012), the National Council of Teachers of Mathematics (2012), and the National Council of Teachers of English (NCTE) (2012) has established bosic competency guidelines for teacher education programs to support TPACK framework. In this partnership, the ISTE NETS for teachers (2008) will be used as the student learning outcomes for all instructional technology courses. Below are excerpts of TPACK standards from the different content professional orgonizations that are addressed in this partnership:

Mathematics: The National Council of Teachers of Mathematics (NCTM, 2012)

Technology Knowledge: "Principle 6: "Technology is essentiol in teoching and learning mathemotics; it influences the mathematics that is taught and enhances students' learning."

Pedagogical Knowledge: "Principle 3: Teoching. Effective mathematics teaching requires understanding what students know and need to leorn and then challenging and supporting them to learn it well."

Content Knowledge: "Principle 4: Learning. Students must learn mothematics with understonding, actively building new knowledge from experience and prior knowledge."

English/Language Arts: The National Council of Teachers of English (NCTE, 2012)

Technology Knowledge: "Stondord 8: Students use a variety of technological and information resources (e.g., libraries, dotabases, computer networks, video) to gather and synthesize information and to create and communicate knowledge."

Pedagogical Knowledge: "Standard 3: Students opply a wide range of strategies to comprehend, interpret, evoluate, and appreciate texts. They drow on their prior experience, their interactions with other readers and writers, their knowledge of word meoning ond of other texts, their word identification strategies, and their understanding of textual features (e.g., sound–letter correspondence, sentence structure, context, graphics).

Content Knowledge: "Standard 1: Students read a wide range of print ond non–print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to ocquire new information; to respond to the needs and demands of society and the workploce; and for personol fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

Science: The National Science Teacher Association (NSTA, 2003)

Technology Knowledge: "Stondord 5: General Skills of Teaching. Teachers of science successfully use technological tools, including but not limited to computer technology, to access resources, collect and process

dato, and facilitote the learning of science."

Pedagogical Knowledge: "Standard 3: Inquiry. Teachers of science engage students both in studies of various methods of scientific inquiry and in active learning through scientific inquiry. They encourage students, individually and collaboratively, to observe, osk questions, design inquires, and collect and interpret data in order to develop concepts and relationships from empirical experiences." Science

Content Knowledge: Standard 1: Content. Teachers of science understand and can articulate the knowledge and practices of contemporory science. They can interrelate and interpret importont concepts, ideos, and applications in their fields of licensure; and conduct scientific investigotions."

Implementation of the TPACK Model in the LLI Partnership

The student learning outcomes for the instructional technology staff development or courses will be aligned with the Internotionol Society for Technology in Education Nationol Educational Technology Stondords for teachers, (ISTE: NETS-T, 2008).

How the LLI Partnership addressed TPACK-Technological Knowledge. The technology knowledge in this partnership wos oddressed the following octivities:

Participation in technology staff development activities (summer 2011) aligned with needs assessments administered in fall 2010.

The technology knowledge objectives in this partnership focused on the following:

- Integrating software for teaching and learning: Microsoft Word, Microsoft Excel, Microsoft Access, Microsoft PowerPoint, Hyperstudio, Comtasio, Snog It, Adobe CS4 Suite, Audocity, iMovie, and Windows Movie Maker.
- Identitying grade level technology competencies aligned with participants' selected content areas for the course or stoff development from the stote's stondord course of study (e.g., North Carolina Standard Course of Study).
- Addressing social, legal and ethical concepts of technology integration in education: Copyright and fair use, acceptable use policy, digital equity, and assistive technologies.
- Understanding the pros and cons of emerging technologies in education: wikis, blogs, twitters, flicker, You Tube, and social networking sites.
- Demonstrating how to conduct functionol Internet searches aligned with content knowledge.
- Demonstrating how to evaluate software and websites for effective integration.

How the LLI Partnership addressed TPACK—Pedagogical Knowledge

The pedagogical knowledge in this partnership was addressed in the following activities:

- Participation in technology staff development octivities (summer 2011) aligned with needs assessments administered foll 2010.
- Participation in technology courses or stoff development activities.

The pedagogical knowledge objectives of this partnership focused on how technology is integrated in eoch content area by addressing the following:

- Understanding theoretical frameworks associated with cognitive, social, and developmental theories of learning and how they relate to technology integration and implications for teaching and learning oligned with different content areas: Project based learning, directed and constructivist models, concepts of instructional design, learning theories, TPACK framework, multiple intelligences, and different integrotion models.
- Understanding how to create functional content–based technology lesson plans and instructional moteriols aligned with the basic principles of instructional design models.

How the LLI Partnership addressed TPACK-Content Knowledge

Content knowledge objectives in this partnership were addressed in the following activities:

- Mentoring relationship with content faculty at NCCU and teachers at Hillside New Tech.
- Participation in technology staff development octivities (January–June 2012) aligned with content objectives.

The content knowledge focused on how participants create rich technology–bosed content leorning activities aligned with pedagogical knowledge. The following ore some aspects that will be addressed:

- Identitying and aligning all octivities with o content area curriculum (social studies education, mothematics, language arts, ond science education) for a defined grode level, and the technology curriculum for the some grade level as defined in the state's standard course of study curriculum. Porticiponts will align all technology assignments, projects, presentations, and reflections with their content and pedogogical knowledge.

The TPACK integration model in this partnership is also supported by Gardner's (1983) multiple intelligences theory and the constructivist teaching approoch.

Describing LLI Partnership Professional Development

Reiman and Peoce (2002) hove developed a research–based model for professional development for transforming teachers in learning innovotive methods and changing their behavior to meet the needs of implementation. According to the reseorchers, a transformation in teachers occurs over time within an Integroted Teaching–Learning Fromework. This framework or model is o blending of two importont components: Instructional Repertoire (Joyce and Showers, 1995) and Conditions for Growth and Development, (Sprinthall and Thies–Sprinthall, 1983). The entire model is at the center of the coaching and support provided, as well os the focus of the administrator's institute. In foct, the Framework is an integral part of this project's professional development model. Teacher porticipants will receive mentoring, coaching, ond clossroom support, including feedback and guided reflection. According to Joyce and Showers, learning new models of instruction requires: i) introducing the theory/rationale, ii) demonstrating/modeling the new learning, iii) providing opportunities for practice with feedback, and iv) adapting and generalizing the new learning through coaching with feedbock. Joyce and showers (1995) found a significant effect model with respect to student goins in knowledge and skill when oll 4 components were employed in staff development training. However, even more significant was their finding that coaching ond feedback were criticol to a transfer in training to the classroom practices of the teacher. Reiman and Peoce (2002) have olso substontioted these findings in their research.

The Conditions for Growth and Development, mentioned previously as a part of the Integrated Teaching–Learning Framework (Sprinthall and Thies–Sprinthall, 1983) include i) toking on a complex new role, ii) guided reflection, iii) balance between the new role and reflection, iv) support and challenge, ond v) continuity. Therefore, the Project PT 21st TLM professional growth pan, based on this Framework, incorporates these elements into its three chief components: i) intensive professional development, ii) ongoing professionol development; and iii) clossroom support (modeling, co–planning, observation, and feedbock). The initial intensive training and the ongoing professional development through coursework, mentoring/cooching, and other components of this project provide participants with the opportunity to take on complex new roles in leorning/teaching new woys and working in collegial teams, and engage in guided reflection.

Additionolly, in this project participants will examine theory/rationale, observe and experience demonstrations, and practice new leorning with feedbock. Back in their own classrooms, participants will have the opportunity to apply and generolize the new learning. According to Dewey (1910), when teachers are fully engaged in reflective proctice they will improve their performance. As teochers reflect on performance, they will develop an essential understonding that will help them increose future performances (Schon,1987). They will be supported and challenged by monthly reviews of videos and scheduled visits from a clinical supervisor as they implement the ideas they are learning, odapting, ond generalizing to their own classrooms. Then, they will have opportunities to engage in planning and focus group discussions in which they further reflect and explore their own growth and that of their students, through ongoing staff development.

The Integrated Teaching–Leorning Framework provides a sound basis for this project's model of professional development, through which it is hypothesized that

teachers will gain a sense of their own competence and efficacy ond feel cored for in the support of their instructors and colleogues. Teachers need to feel competent and cared for, in order to create clossrooms and classroom cultures in which students in turn feel cared for as well as competent. The commitment to providing professional development, course work credit, the beliefs that these teachers will succeed given the oppropriate level of support and challenge, and that they do hove o large degree of control over their students' obility to experience success with mathematics demonstrotes our confidence in them os competent professionals, deserving of intellectual, sociol, and emotionol support from us (as partners) as well as from their peers.

Regardless of content, this tronsformotion in teachers requires, minimally, six months, and typicolly 1–2 years with ongoing support (Sprinthall, Sprintholl, and Oja, 1998). And the transformation almost always involves a change in teachers' thinking about their own capabilities and power to moke things happen. They must believe thot their actions can and will have an impoct on the ocademic performonce of their students. Furthermore, since high–efficacy teochers are found to work well with their students in a cooperative, rather thon in an authoritarian woy, and to involve their students in decision making obout their own learning (Ashton, 1984), it follows that an increase in self–efficacy of the teachers in this project will lead to a change in their students' locus of control perceptions, i.e., an increose in internality (feelings of more control over whot happens to them). The nature of this project is aligned with the transformation addressed this section.

Defining Multiple Intelligences

According to Gardner (1983), intelligence should not be measured os a singulor entry, but by multiple entries addressing intelligences possessed by all humans. Gardner (1983) identified eight bosic multiple entries or multiple intelligences, which all humans possess in different degrees. These eight basic entries are centrol to ony how students learn with technology, (Bull, 2009). Multiple intelligences concepts will be aligned with technological and content knowledge in the following manner:

- *Linguistics:* Participants will design newsletters, articles, lesson plons, ond learning activities.
- *Logical–mathematical reasoning:* Participants will create Excel spreadsheets with for formulas and a grodebook with the "What If" function.
- *Spatial:* Porticipants will use digital comeras and camcorders to create images and videos, and used spatial representations in their multimedio presentations.
- *Interpersonal:* Participants will share technology based content materials and activities with participants from the some discipline and the general faculty as a whole.
- *Intrapersonal:* Participants will be encouraged to use video or oudio bosed reflections. Participants will engage in forum discussion via Blackboard.
- *Body Kinesthetic:* Participants will use role play, performance ond other delivery options to support this intelligence. Participants will archive information for future presentations.
- *Musical:* Participants will be trained on how to tap musical intelligence to support instruction. Naturalist: Participants will be trained on globol perspectives in dealing with concepts.

TPACK and the LLI Partnership Foundations: The Constructivist Theoretical Framework

The constructivist teaching approoch also supports TPACK integration at all levels. The constructivist teaching approoch is widely used to integrote technology in educational settings. At all levels of education, especially in teocher education progroms, there is a poradigm shift in the learning from the traditional style of instruction and learning to students constructing knowledge through project based learning. The goal in using the constructivist teoching approoch to integroting technology is to let the learner determine how to integrate technology rather than technology determining the route the learner takes. The constructivist teaching approach makes effective use of students' prior knowledge and cognitive structures based on those experiences and pedagogical knowledge. These preconceived structures [prior knowledge] are valid, invalid or incomplete and students reformulate their existing structures only if new information or experiences are

connected to knowledge already in memory. To integrate new ideas in learning, students must draw inferences, elaborations and relationships between old perceptions and new ideas. Technology integration is a major component of the constructivist teaching approach in teaching and learning in 21st Century education. For technology integration to be meaningful instructors should have their students construct content rich activities related to their fields of study or expertise, rather than creating generic activities.

The focus from the constructivist teaching perspective using the TPACK model for the LLI Partnership addressed the following:

- Related instruction to the technological, pedagogical knowledge, and content knowledge area of each teacher.
- Contextualized instruction in authentic activities aligned with content areas and grade levels.
- Provided teachers with opportunities to collaborate with others from the same discipline as well as with teachers from other disciplines.
- Promoted personal autonomy and control of learning by creating knowledge from prior experiences.
- Promoted personal growth of teachers through designing and creating technology–based activities aligned with their content areas and grade levels.
- Evaluated technology–based products from a perspective and understanding of the effectiveness of each product as it relates to content and grade level objectives.

An Active Model of TPACK Implementation and Integration: The Learning Laboratory Initiative (LLI) Partnership

Designing Instruction for Blended Learning, Online Delivery and a Faculty Mentorship Model to Promote 21st Century Teaching and Learning. Institutional Participants in the Learning Laboratory Initiative Grant: The Faculty of North Carolina Central University and the Faculty of Hillside New Tech High School. The goals of the Learning Laboratory Initiative Grant were initially implemented in 2011 and are currently maintained through an ongoing and active partnership. The goals of the partnership are as follows:

- Develop mentor–teacher teams to promote y technology (blended learning and online instruction) infused curriculum and instruction in the following content areas: Biology, Chemistry, Mathematics, English, Business and education–related concepts.
- Design an online freshman seminar as a strategy for increasing online technology skills for both teachers and students using content that will support student transitions to high school and to online instruction.
- Train teachers at Hillside NT to analyze, design, develop, implement and evaluate courses designed for blended learning and online delivery modes.

The Grant Implementation Strategy

Phase One: Included a week long summer intensive emersion in collaborative mentoring and technology training that included all grant participants. The mentoring and technology training took place from 8:00 a.m. to 5:00 p.m. each day during the week of June 13th – June 17th, 2011.

Phase Two: Includes an ongoing mentorship between NCCU faculty and Hillside NT faculty to meet the needs of the Hillside NT faculty in their various disciplines and respective classrooms.

The Two NCCU Mentoring & Technology Training Teams

The Mentoring Training Team consisted of Dr. Sharon Spencer (NCCU School of Education, Assistant Dean, and Director of the Teacher Education Program), and Ms. Evalee Parker (NCCU School of Education, Induction Coordinator).

The Technology Training Team consisted of NCCU School of Education faculty that included: Dr. Prince Bull, Associate Professor (Educational Technology Interim Chair and LLI Grant Principal Investigator) – Educational Technology; Dr. James Osler, (Associate Professor Educational Technology and Lead Professor of Online Instructional Design); Ms. Deborah Eaton (School of Education Technology Director and Assessment Coordinator); and Ray Dragon (School of Education Technology Services and Web Designer).

North Carolina Central University Participants: University faculty from the School of Education – Educational Technology and selected STEM Areas in the College of Science and Technology – Biology, Chemistry, and

Mathematics.

Hillside New Tech High Participants: Dr. William Logan, Hillside New Tech High Principal; Hillside New Tech Curriculum Coordinator; and 23 Hillside New Tech Faculty Members.

Phase One: A Week Long Summer Intensive Emersion and Troining with Technology Schedule Conducted as a Face to Face and Online Instructional Delivery Training Module

Comprehensive Mentoring and Technology Training took place on June 13–17, 2011 (Troining was conducted onsite at Hillside New Tech High School). The in–depth troining had both University ond High School faculty as porticipants. Troining opened with an intensive Mentor/Mentoring process that involved the University faculty, NT High School faculty, and the Technology Training focilitators. The process allowed for o seamless integrotion of collegiality that permeated the remainder of the week. This excellent lead off was followed by four days of technology emersion. Technology training started with theoreticol frameworks which included Visuol Thinking, the TPACK Model, and the Basic Linear Model of Instructionol Design. This introduction provided participonts with methods thot addressed how they could infuse technology into curriculum. The introduction to technology in this monner was greatly appreciated and fueled the remainder of the week of technology training. The participonts earned a total of 35 hours which were equivolent to 3.5 Continuing Education Units in Online Teaching. Comments by porticiponts (as Phase One Outcomes) follow the training schedule that is provided. The in–depth week long schedule of the training consisted of the following schedule displayed in [Figure 3].

An Online Blackboard Portal was created developed, maintained, by NCCU (Osler serving as moderator). This online tool was (and is currently) provided by the University Course Monogement System to upload participants work, communicate, and shore information. The purpose of the NCCU & Hillside NT High LLI Partnership Online Portal is to provide a comprehensive online resource to support the gront portners, disseminote relevont technology–reloted outcomes (ond related literature), and shore outcomes and projects. A screenshot of the online portal is displayed in [Figure 4].

LLI Partnership Results

The following are comments by Hillside NT Participants that took place in the week of LLI Partnership Technology Training. The comments are from odministrators, presenters, and participants is displayed in [Figure 5].

LLI Partnership Research Questions (provided to give clarity regarding the over goals and objectives of the LLI Partnership):

The partnership was guided by the following questions:

- What is the impact of designing the Freshman Seminar course for online delivery or blended learning on students' performance?
- How effective was the content faculty/teacher mentor relotionship on teachers' productivity in developing blending learning and online instruction?
- What are the perceptions of teachers towards blended learning, and online instruction?
- What are the impacts of faculty mentors on clossroom instruction and students' performance?

Results

Partnership Evaluation and Feedback

Evaluation of the partnership was multi–faceted. It includes the effectiveness of the professionol development activities/courses, instructors/trainers, the impact on administrators, mentor/mentee relationship and most significantly, the impact on participant teachers, teacher mentees ond students. For each training component, participants will evaluate the professional development activities (including workshops, courses, coaching sessions, and feedback sessions) for perceived benefits, goals met, and instructor/troiner effectiveness. Evoluotion will begin at the end of spring 2011, summer 2011, fall 2011, spring 2012, ond end in summer 2012. The table that follows aligns the goals with evaluation tools for determining the impact of the School of Education portnership with Hillside New Tech High on teachers, students and administrators at Hillside New Tech High School. [Figure 7]. Provides a toble of the LLI Partnership Goals:

Using both face–to–face and teleconference options, regular meetings were scheduled to ensure that all stakeholders are in agreement that activities are planned

Time:	June 13th	June 14th	June 15th	June 16th	June 17th
8:30–12:00	Welcome and Intraductions Mentor/Mentoring Relotionship: A Portnership between NCCU foculty & Hillside NT teochers	Instructional Design: Learning to Use the ADDIE Model to Construct Technology Tools for Instruction, Visual Thinking and the TPACK Model: How it con be Implemented to Design Multimedio, Using the Flip Comero in Teoching: Flip Comero Use ond pictures ond review of Blockboord Accounts	Presentation: Multiple Intelligences (Survey Completed) Comtosia: Developing Content for Teaching Second Life (Demo ond Account Creotion)	Teaching with Edmodo, Wizzio, and Diigo: Blended Learning (Synchronous Teaching ond Asynchronous Teoching ond Leorning): Integrate Comtosio files Presentotion: CourseSites by Blockboord	Teaching with Blackboard: Blended Leorning (Synchronous Teoching ond Asynchronous Teoching ond Leorning): Integrote Comtosio files
	Presenter Dr. Sharan Spencer Ms. Evalee Parker	Presenters Ms. Debarah Eatan Dr. James Osler Dr. Prince Bull	Presenters Ms. Debarah Eatan Dr. James Osler Dr. Prince Bull Hillside NT Teachers	Presenters Ms. Debarah Eatan Dr. James Osler Dr. Prince Bull Hillside NT Teachers	Presenters Ms. Debarah Eatan Dr. James Osler Hillside NT Teachers
12:00 – 1:00 p.m.	Lunch (an yaur awn)				
1:15 – 3:00	Overview of Online Teoching and Learning Theoretical underpinnings Instructiono! Design (Introduction) TPACK Model Overview: Teoching Using Blended Leorning Approoch	Introduction to Comtosio: Designing Instruction Using Comtosio	Second Life Experimentation in the 3D Virtuol Environment Comtosio: Developing Content for Teoching	SAS ® Curriculum Pathways © (Demo) Teaching with Elluminote: Blended Leorning (Synchronous Teoching ond Asynchronous Teoching ond Leorning): Integrote Comtosio files	Bringing It All Together: Developing Content for Blended Leorning: Presentotions by Teochers ot Hillside NT
3:30 – 4:30 p.m.	Presenters Dr. Prince Bull Dr. Jomes Osler Ms. Eoton	Presenters Dr. Prince Bull Dr. Jomes Osler Ms. Eoton	Presenters Dr. Prince Bull Dr. Jomes Osler Ms. Eoton	Presenters Ms. Deboroh Eoton Dr. Jomes Osler Dr. Prince Bull Mr. Rolph P. Moore (SAS ®)	Presenters: Hillside NT Teochers
	Faculty & Teachers Team Building Review, closure ond evoluotion	Show and Tell – Product Presentotions Foculty & Teochers Team Building, Emoil ond Blockboord Course Shell Doto Uplooding ond Forum Completion	Show and Tell –Product Presentations Foculty & Teachers Team Building, Emoil ond Blockboord Course Shell Doto Uplooding ond Forum Completion	Show and Tell – Product Presentotions Faculty & Teochers Teom Building, Email ond Blockboord Course Shell Dato Uplooding ond Forum Completion	Emoil ond Blockboord Course Shell Doto Uplooding ond Forum Completion, Open Forum ond Discussion
4:30 p.m.	Dismissol	Review, Closure & Evoluotion	Review, Closure & Evoluation	Review, Closure & Evaluation	All Porticipants Final Evoluotion (Likes and Areas for Impravement)

Figure 3. Schedule of LLI Hillside NT Faculty Training

Figure 4. The LLI NCCU & Hillside NT Partnership Portal

Participant	Institution	Comment
Austin Hagan	Hillside NT	I would like to thonk you oll for toking time to work with Hillside New Tech High School. Mony times we ottend workshops to which we leove wondering when or how to opply the skills. This however hos been the most rewording workshop becouse these skills con immediotely put to use. Teochers hove olreody developed presentotions for the upcoming school yeor ond to use os o resource for differentioting instruction (not to mention thot it's just fun). Thonk you for your support in plocing Hillside New Tech on top of the current trends in educotionol technology.
William Logan	Hillside NT	I om so impressed with the video presentotions thot I hove been oble to see thus for! So impressed thot I will be requiring oll porticiponts to utilize this tool in o future project next yeor or os o communicotion tool for your porents ond students. Whot o greot woy to use technology to enhonce instruction ond communicotion! Woy to go New Tech!!!
Prince Bull	NCCU SOE	Dr. Logon, I must concur thot New Tech hos on excellent technology driven stoff. All we did (NCCU teom) wos to introduce the progrom, demonstrote ond provide o brief overview of the technology ond New Tech teochers were reody to design. This is the best technology group thot I hove presented to. They ore quick to generolize concepts, creotive, innovotive, ond willing to explore on their own by oligning their experiences with their content. I hove no doubt thot New Tech teochers will for exceed our expectotions in using this tool. I om glod thot I om port of this unique progrom to tronsform 21st century teoching ond leorning ot New Tech. I look forword to 2011/12 ocodemic to wotch New Tech students leorn using on innovotive tool. The credit goes to your stoff. Thonk you for giving us the opportunity to work with New Tech teochers.
Demetrius Hoddock	Hillside NT	Dr. Osler, Here is my email address. We spoke briefly about setting up a Blackboard account for New Tech teachers so we con utilize it for our closses. Also, since I have used blackboard in the post. I can teach the other teachers how to set up and maintain their classes. They all learn quickly anyway, so they will do much more on their own thon I could ever show them.
Deborah Eoton	NCCU SOE	Dr. Bull, I certoinly ogree thot this is o greot group of hord working technology competent teochers! It's quite omozing to see whot they hove occomplished ond produced in just 3 doys!
Ralph Maare	SAS®	Jomes, Thonks so much for giving us the opportunity to work with the outstonding stoff ot Hillside New Tech. I hope thot the teochers hod os much fun during the session os I did. We look forword to continuing to ossist you in this project, os well os following up on the ideos for working with your teocher troining progroms ot Centrol. If there's onything we con do to ossist you or your colleogues os you move forword, pleose let us know.
DPS Smolls		Good Evening Drs. Bull/Osler ond Ms. Eoton, I concur with Mr. Hogon concerning eose of use, opplicobility of skills, ond the fun foctor. This training has me excited about tools that I con develop specificolly for counseling to help students ond parents. Often troinings ore geared towards the core content oreos leoving the support services to fend for themselves. Thot is certoinly not the cose here. I look forward to working with the technalogical hardware and software that has been provided. They will definitely help me to improve my accessibility to those I serve. Dr. Logan, On o side note, I do not think that you will hove any opposition to your charge to utilize the afforded tools in the upcoming school year.

Figure 5. Table of Phase One: Qualitative Outcomes

LLI Goal	Outcome
1. Develop mentor–teocher teams to promote technology (blended learning ond online instruction) infused curriculum ond instruction in the following content areos: Biology, Chemistry, Mathematics, English, Business and education–related concepts	Technology ond software (such os Blockboord Collobarote/Elluminote Live) was provided to oid in online course offerings and foce to face classroom teoching. Hillside faculty used Camtasio and recorded video files (with their technalogy training) to support their courses and teaching methods.
2. Troin teochers ot Hillside NT to onolyze, design, develop, implement ond evoluote courses designed for blended leorning ond online delivery modes.	University foculty worked os mentors to Hillside NT foculty in the STEM oreos ond the Hillside NT Freshmon Seminor course.
3. Design an online freshman seminar as a strategy for increasing online technology skills for both teachers and students using content that will support student transitions to high school and to online instruction. (In addition, Report Findings and Outcomes of the LLI Partnership)	The Freshman Seminar course was enhanced by Hillside NT faculty through the use of technology. A collaborative research publication was created by NCCU and Hillside NT faculty members. The article was submitted and accepted at a notionol technology conference. The finol report on the grant was submitted in Morch of 2011. The gront reviewers were very impressed with the portnership focilitotion methodology and the technology–bosed outcomes. As o result, sustoinoble ond supplementol funding for further continuonce of the portnership wos oworded ond the portnership will continue into the 2012 ocodemic yeor.

Figure 6. Table of Phase Two: Outcomes

according to the calendar of the school system and with consideration of other state, regional, and local activities. Throughout the project regular conversations will be necessary to assure alignment of courses and professional development activities with curriculum pacing guides and the needs of the teachers. Initial planning meetings worked through the integrated design of the entire program (including content, pedagogy and technology modes of delivery), and to confirm logistics and ensure continuity for the courses, summer institute, and support through classroom coaching, as well as the administrators institutes. This co–planning focused on the continuous collection of qualitative data that is now used in the supplemental funding of the next round of the grant. The LLI Partnership between the NCCU School of Education and Hillside New Tech provides a new model for technology integration that brings out the best in faculty of each respective institution. This is the type of dynamic collaboration that is the framework that will guide 21st Century teaching and learning. The additional funding is evidence that the model

Goal	Evaluation Tool
Increase the number of courses and electives delivered online or through blended learning	Track courses designed and delivered through the partnership
Design and develop the freshman seminar course for online and blended learning delivery modes.	Implement a freshman seminar course online or through blended learning. Measure students' performance in the online, blended learning and traditional settings.
Teachers develop course content for blended learning or online delivery.	Number of course developed as online or blended learning. Perceptions of teachers towards blended learning and online delivery modes.
Teachers will demonstrate a notable change in self–efficacy regarding what they "can do" to impact student learning using technology and increased content knowledge.	Pre and post surveys; Video and written reflections (Blackboard and Elluminate); work products.
Participants will demonstrate at least a 10% increase in their class EOC pass rate on the State tests.	Pre (2010 benchmark) and post (End–of– Course State 2011 scores) test results of students of participants;

Figure 7. Table of the LLI Grant Partnership Goals

is appreciated by the governmental agencies who value the collaborative efforts of K–12 and higher education faculty. It is these types of dynamic collaborative efforts that will produce new models of teaching coupled with specialized learning tools and contextual instructional strategies that will re–shape education both now and in years to come.

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